

**What is claimed is:**

1. A radiation protection material for use in radiation protection gloves comprising: at least one layer of a polymeric material of rubber having radiation absorbing particles and a cellulose derivative distributed therein, the radiation absorbing particles attenuating the intensity of scattered radiation.
- 5 2. The radiation protection material of claim 1 wherein the at least one layer of polymeric material comprises about 20 to 40% by dry weight of rubber and about 60 to 80% by dry weight of radiation absorbing particles.
- 10 3. The radiation protection material of claim 2 wherein the cellulose derivative comprises about 0.1 to 0.4% by dry weight.
4. The radiation protection of claim 1 wherein the at least one layer of polymeric material comprises about 33% by dry weight of rubber and about 67% by dry weight of radiation absorbing particles.
- 15 5. The radiation protection material of claim 4 wherein the cellulose derivative comprises about 0.25% by dry weight.
6. The radiation protection material of claim 4 wherein the cellulose derivative comprises a water-soluble cellulose ether.
7. The radiation protection material of claim 4 wherein the water-soluble cellulose ether comprises methylcellulose.
- 20 8. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 100 % by weight of bismuth oxide particles.
9. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 100 % by weight of tungsten oxide particles.
- 25 10. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 100 % by weight of tin oxide particles.
11. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 100 % by weight of antimony-tin oxide particles.
- 30 12. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 60 to 90 % by weight metallic tin particles and about 10 to 40 % by weight of bismuth oxide particles.

13. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 60 to 90 % by weight of tin oxide particles and about 10 to 40 % by weight of tungsten oxide particles.

5 14. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 60 to 90 % by weight of antimony-tin oxide particles and about 10 to 40 % by weight of tungsten oxide particles.

15. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 40 to 60 % by weight of bismuth oxide particles and about 40 to 60 % by weight of tungsten oxide particles.

10 16. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 40 to 60 % by weight of tin oxide, about 20 to 30 % by weight of tungsten oxide particles, and about 20 to 30 % by weight of bismuth oxide particles.

15 17. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 40 to 60 % by weight of antimony-tin oxide particles, about 20 to 30 % by weight of tungsten oxide particles, and about 20 to 30 % by weight of bismuth oxide particles.

20 18. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 60 to 90 % by weight of tin oxide particles and about 10 to 40 % by weight of bismuth oxide particles.

19. The radiation protection material of claim 4 wherein the radiation absorbing particles comprise about 60 to 90 % by weight of antimony-tin oxide particles and about 10 to 40 % of bismuth oxide particle.

25 20. The radiation material of claim 4 wherein the at least one layer of polymeric material is formed by dipping a pattern into the material and vulcanising the material on the pattern.

21. The radiation protection material of claim 4 wherein the polymeric material comprises a rubber material.

30 22. The radiation protection material of claim 21 wherein the rubber material is selected from the group consisting of polyisoprene rubber, polybutadiene rubber, styrene-butadiene rubber, nitrile rubber, butyl rubber, ethylene-propylene rubber, neoprene rubber, silicone rubber, polysulfide rubber and urethane rubber.

23. The radiation protection material of claim 22 wherein the polyisoprene rubber is comprised of a natural rubber latex.
24. The radiation protection material of claim 23 wherein the natural rubber latex comprises about 60% by dry weight of rubber and about 0.4 to 0.8% by weight of ammonia prior to a vulcanisation of the material.
25. The radiation protection material of claim 23 wherein the natural rubber latex is a prevulcanised natural rubber latex having a pH-value of greater than about 10 to 11.
26. The radiation protection material of claim 4 wherein the at least one layer of polymeric material comprises at least two layers.
27. The radiation protection material of claim 4 further comprising at least one layer of a polymer coating on an inner that reduces a surface friction of the inner surface of the radiation protection material with respect to hands.
28. The radiation protection material of claim 27 wherein the at least one layer of polymer coating comprises a copolymer of an acrylic acid and an acrylic acid ester.
29. The radiation protection material of claim 27 further comprising at least one layer of a cationic-based super-surfactant to improve the lubricity and donnability of the gloves with respect to damp hands.
30. The radiation protection material of claim 4 further comprising at least one layer of a polymer coating on an outer surface of the at least one layer of material that reduces a stickiness of the surface.
31. The radiation protection material of claim 30 wherein the at least one layer of polymer coating reduces a surface drag of the outer surface.
32. The radiation protection material of claim 30 wherein the at least one layer of polymer coating material comprises a polyacrylate.
33. The radiation protection material of claim 4 wherein the radiation absorbing particles have a particle size of less than about 10  $\mu\text{m}$ .
34. The radiation protection material of claim 3 wherein the radiation absorbing particles have a particle size of less than about 6  $\mu\text{m}$ .
35. The radiation protection material of claim 3 wherein the radiation absorbing particles have a particle size of less than about 2  $\mu\text{m}$ .